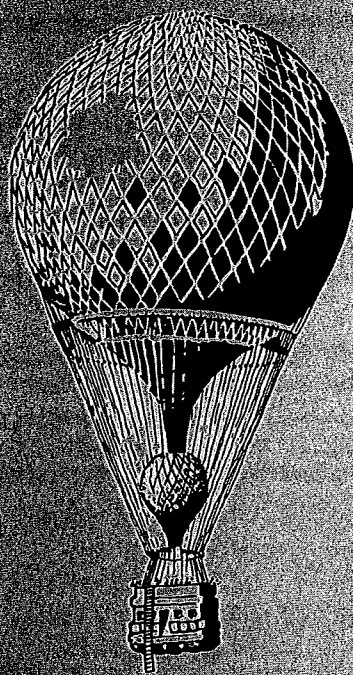


02130

See Library



BALLOON FLIGHT RECORD and Scheduled Balloon Flights



No. 24, Summer 1967

Editor: Penny W. Springer

Published quarterly by the
National Center for Atmospheric Research,
Box 1470, Boulder, Colorado 80302

Second class postage paid
at Boulder, Colorado

1/02/8

2.0 1A

NCAR MOIA

7- ...
...

1967 SUM 17 001

Locations in this issue:

Albrook AFB, Canal Zone, Panama
Chico, California
Goodfellow AFB, Texas
Palisade, Texas
Tonopah, Nevada
Stour, Rally, South Dakota

This Flight Record, which since 1962 has been carried in *Scientific Ballooning* and its successor, *Facilities for Atmospheric Research*, will henceforth be published separately. Distribution is made on request to the Publications Department, National Center for Atmospheric Research.

NCAR LIBRARY

0-2130

NCAR Library



5 0583 01004833 2

BALLOON FLIGHT RECORD

| Date (1967) | Location | Sponsor | Investigator | Flight operation conducted by | Balloon specs (volume in cu ft; polyethylene unless specified) |
|----------------|----------------|------------|------------------------|--|---|
| Feb 27 | Tonopah, Nev. | CEM* | CEM | GTS | 69,000; GT-1012-2; dacron reinforced Mylar |
| Mar 7 | Goodfellow AFB | AEC | AEC | USAF** | 450,000; 1.5 mil |
| " 8 | " | " | " | " | 242,000; 1.5 mil |
| " 10 | Albrook AFB | " | " | " | 450,000; 1.5 mil |
| " 14 | " | " | " | " | 1.6 million; 1.5 mil |
| Mar 16 | Goodfellow AFB | AEC | AEC | USAF** | 1.5 million; 1.0 mil |
| " 16 | Albrook AFB | " | " | " | 242,000; 1.5 mil |
| " 21 | Goodfellow AFB | " | " | " | 10.6 million; 0.7 mil |
| " 22 | " | " | " | " | 1.6 million; 1.5 mil |
| Apr 1 | Albrook AFB | " | " | " | 5.3 million; 1.5 mil |
| Apr 2 | Albrook AFB | AEC | AEC | USAF** | 10.6 million; 0.7 mil |
| " 3 | " | " | " | " | 450,000; 1.5 mil |
| " 4 | Goodfellow AFB | " | " | " | 450,000; 1.5 mil |
| " 5 | Albrook AFB | " | " | " | 3.5 million; 0.8 mil |
| " 6 | " | " | " | " | 1.6 million; 1.5 mil |
| Apr 7 | Albrook AFB | AEC | AEC | USAF** | 242,000; 1.5 mil |
| " 7 | Goodfellow AFB | " | " | " | 242,000; 1.5 mil |
| " 22 | " | " | " | " | 1.6 million; 1.5 mil |
| " 27 | Palestine | NASA | R. Vogt (Cal Tech) | NCAR | 10.6 million; 0.5 mil; 150-lb tapes, capped |
| May 2 | " | NASA, ONR | W. Webber (U. Minn.) | " | 5 million; 0.75 mil |
| May 2 | Goodfellow AFB | AEC | AEC | USAF** | 1.6 million; 1.5 mil |
| " 3 | " | " | " | " | 450,000; 1.5 mil |
| " 7 | Palestine | NASA | G. Chapman (ORNL) | NCAR | 5 million; 0.75 mil; 150-lb tapes |
| " 8 | Goodfellow AFB | AEC | AEC | USAF** | 242,000; 1.5 mil |
| " 9 | Sioux Falls | Raven | Raven | Raven | 93,000; 1.5 mil |
| May 13 | Sioux Falls | Raven | Raven | Raven | 93,000; 1.5 mil |
| " 15 | Goodfellow AFB | AEC | AEC | USAF** | 3.5 million; 0.75 mil |
| " 15 | Palestine | NASA | J. Overbeck (MIT) | NCAR | 10.6 million; 0.5 mil; capped |
| " 16 | " | NASA, ONR | W. Webber (U. Minn.) | " | 2.94 million; 0.7 mil; 100-lb tapes |
| " 16 | " | U. Bristol | P. Fowler (U. Bristol) | " | 10.6 million; 0.7 mil; 200-lb tapes |

* Continental Electronics Mfg. Co.

** Detachment 31, 6th Weather Wing

| Float altitude (ft) | Flight duration (hr) | Payload (lb) | Experiment | Remarks |
|---------------------|----------------------|--------------|---|--|
| 17,000 | 5 | --- | Balloon-antenna system | Tethered flight successful |
| 87,300 | 5.1 | 367 | Particulate debris sampling | Successful flight |
| 79,300 | 3.6 | 361 | " | " |
| 89,600 | 4.6 | 395 | " | " |
| 104,600 | 4.9 | 445 | " | " |
| 104,700 | 5.1 | 575 | Particulate debris sampling | Successful flight |
| 80,600 | 4.3 | 390 | " | " |
| 131,800 | 6.3 | 628 | " | " |
| 104,000 | 5.5 | 419 | Hydrazine sampler | " |
| --- | 1.3 | 466 | Particulate debris sampling | Balloon burst at 58,000 ft |
| 130,600 | 7.2 | 517 | Particulate debris sampling | Successful flight |
| 89,100 | 4.9 | 396 | " | " |
| 90,100 | 5.3 | 356 | " | " |
| 119,000 | 7.9 | 599 | " | " |
| 106,200 | 5.5 | 463 | " | " |
| 77,400 | 3.3 | 399 | Particulate debris sampling | Successful flight |
| 79,000 | 3.7 | 360 | " | " |
| 105,000 | 3.7 | 488 | " | Overinflated balloon; sampled outside prescribed altitude limits |
| 139,100 | 9 | 744 | Primary cosmic radiation spectra | Successful flight |
| 123,400 | 9.8 | 690 | Cygnus X-ray source | " |
| 103,600 | 5.4 | 497 | Particulate debris sampling | Successful flight |
| 89,900 | 5.2 | 357 | " | " |
| 117,000 | 3.5 | 1098 | Gamma ray background; instrument evaluation | " |
| 79,200 | 4.3 | 364 | Particulate debris sampling | " |
| 70,000 | 12 | 300 | Instrumentation check | " |
| 70,000 | 8 | 300 | Instrumentation check | Successful flight |
| --- | 1.6 | 611 | Particulate debris sampling | Balloon failed at 59,000 ft |
| 136,500 | 10.1 | 718 | X-ray fluxes | Successful flight |
| 118,500 | 7.1 | 492 | Cygnus X-ray source | " |
| --- | --- | 1153 | Nuclear emulsions exposure | Flight terminated early |

BALLOON FLIGHT RECORD

| Date (1967) | Location | Sponsor | Investigator | Flight operation conducted by | Balloon specs (volume in cu ft; polyethylene unless specified) |
|----------------|----------------|---------------|------------------------------|--|---|
| May 17 | Goodfellow AFB | AEC | AEC | USAF** | 1.49 million; 1.0 mil |
| " 17 | Palestine | U. Bristol | P. Fowler (U. Bristol) | NCAR | 10.6 million; 0.7 mil; 100-lb tapes |
| " 18 | " | NCAR, NASA | A. Morris (NCAR) | " | 80,000; 1.0 mil; 150-lb tapes |
| " 22 | " | U. Bristol | P. Fowler (U. Bristol) | " | 10.6 million; 0.5 mil; 100-lb tapes |
| " 23 | " | NASA | J. Klarmann (Wash. U.) | " | 10.6 million; 0.5 mil; 100-lb tapes, capped |
| May 23 | Goodfellow AFB | AEC | AEC | USAF** | 10.6 million; 0.7 mil |
| " 24 | Palestine | NASA | J. Overbeck (MIT) | NCAR | 9 million; 0.75 mil; 150-lb tapes |
| " 28 | " | " | E. Chupp (UNH) | " | 3 million; 0.55 mil |
| " 29 | " | " | " | " | 2.94 million; 0.5 mil; 100-lb tapes |
| June 3 | " | NASA, ONR | W. Webber (U. Minn.) | " | 2.94 million; 0.7 mil; 100-lb tapes |
| June 4 | Palestine | AFOSR | R. Haymes (Rice U.) | NCAR | 10.6 million; 0.7 mil; 300-lb tapes, capped |
| " 4 | " | NASA | L. Peterson (UCSD) | " | 3 million; 0.75 mil; 250-lb tapes |
| " 7 | " | " | " | " | 6 million; 0.5 mil; 150-lb tapes |
| " 8 | " | " | E. Chupp (UNH) | " | 2.94 million; 0.5 mil; 100-lb tapes |
| " 9 | " | NSF | R. Huggett (LSU) | " | 10.6 million; 0.9 mil; 500-lb tapes |
| June 9 | Palestine | NASA | C. Hemenway (Dudley Obs.) | NCAR | 1.25 million; 1.0 mil; 100-lb tapes |
| " 13 | " | " | L. Peterson (UCSD) | " | 10.6 million; 0.5 mil; 100-lb tapes, capped |
| " 14 | " | " | E. Chupp (UNH) | " | 2.94 million; 0.5 mil; 100-lb tapes |
| " 15 | " | " | L. Peterson (UCSD) | " | 2.94 million; 0.6 mil; 100-lb tapes |
| " 15 | " | NCAR, NASA | A. Morris (NCAR) | " | 18,000; 0.75 mil |
| " 19 | " | NASA | J. Overbeck (MIT) | " | 9 million; 0.75 mil; 150-lb tapes |
| " 26 | " | " | " | " | 10.6 million; 0.5 mil; 100-lb tapes, capped |
| " 27 | " | ONR | J. Waddington (U. Minn.) | " | 10.6 million; 0.5 mil; capped |

** Detachment 31, 6th Weather Wing

| Float altitude (ft) | Flight duration (hr) | Payload (lb) | Experiment | Remarks |
|---------------------|----------------------|--------------|--|--|
| 101,900 | 5.4 | 701 | Hydrazine sampler | Successful flight |
| 133,500-128,400 | 19.6 | 891 | Nuclear emulsions exposure | " |
| --- | --- | 226 | Long duration tracking (Nimbus-B) | Balloon burst at 68,000 ft |
| 131,500 | 16.1 | 991 | Nuclear emulsions exposure | Successful flight |
| 135,800 | 6.4 | 854 | Emulsions and spark chamber by gamma ray | " |
| 136,000 | 6.1 | 655 | Particulate debris sampling | Successful flight |
| 131,400 | 12.4 | 723 | X-ray fluxes | " |
| --- | --- | 301 | Gamma ray measurement | Balloon burst near end of inflation |
| 127,800 | 8 | 296 | " | Gondola telemetry failed; flight terminated early |
| 118,600 | 10.5 | 515 | Cygnus X-ray source | Successful flight |
| 128,800 | 8 | 1139 | Gamma ray emission from Crab Nebula | Successful flight |
| 119,200 | 12 | 386 | Gamma ray anisotropics across galactic plane | " |
| 132,200-120,000 | 6 | 518 | Gamma ray emission from Crab Nebula | " |
| 126,300 | 5.5 | 313 | Gamma ray measurement | Loss of telemetry in gondola; flight terminated early |
| 117,600 | 18 | 1860 | Interactions of ultra-high energy particles | Successful flight |
| 109,500 | 18.8 | 272 | Meteoritic dust collection | Successful flight |
| --- | --- | 763 | Gamma ray emission from Scorpius XR1 | Balloon leveled at 95,200 ft; flight terminated early |
| 128,500 | 8.1 | 301 | Gamma ray measurement | Successful flight |
| 122,800 | 16.2 | 398 | Gamma ray anisotropics across galactic plane | " |
| 84,400 | 18.8 | 344 | Long duration tracking (Nimbus-B) | Severe thunderstorms and hail; flight terminated early |
| --- | --- | 702 | X-ray flux measurement with oriented gondola | Balloon burst at 63,200 ft |
| 134,600 | 8.6 | 812 | " | Successful flight |
| --- | --- | 1037 | High energy gamma rays | Ascent to 130,000 ft; flight terminated at 65,000 ft |

Scheduled Balloon Flights

| Date (1967) | Location | Sponsor | Investigator | Flight operation conducted by | Balloon specs (volume in cu ft; polyethylene unless specified) |
|----------------|-----------|----------|------------------------------|--|---|
| July | Palestine | ONR | J. Waddington (U. Minn.) | NCAR | 10.6 million; 0.5 mil |
| " | " | NASA | R. Novick (Columbia U.) | " | 450,000; 0.5 mil |
| " | " | " | W. Kraushaar (U. Wis.) | " | 3.5 million; 0.75 mil |
| " | " | NCAR | D. Ehhalt (NCAR) | " | 1.6 million; 1.0 mil |
| " | " | NASA | K. Stefan (NCAR) | " | 2.94 million; 1.5 mil |
| July | Palestine | NASA | K. Stefan (NCAR) | NCAR | 9.0 million; 0.75 mil |
| " | " | " | " | " | 3.0 million; variable |
| " | " | " | W. Hoffmann (GSFC-ISS) | " | 1.18 million; 0.6 mil |
| " | " | NSF | R. Huggett (LSU) | " | 4.5 million; 1.5 mil |
| " | " | NASA | E. Boldt (GSFC) | " | 10.6 million; 0.5 mil |
| July | Palestine | NRL | G. Fazio (Smithsonian) | NCAR | 10.6 million; 0.5 mil |
| " | " | AFOSR | R. Haymes (Rice U.) | " | 10.6 million; 0.7 mil |
| " | " | NASA | J. Arnold (UCSD) | " | 360,000; 1.5 mil |
| " | " | " | L. Peterson (UCSD) | " | 10.6 million; 0.5 mil |
| " | Chico | " | L. Alvarez (U. Calif.) | GTS | top - 255,000; main - 9 million, 0.35 mil, Mylar |
| Aug | Palestine | NASA | K. Frost (GSFC) | NCAR | 10.6 million; 0.7 mil |
| " | " | " | R. Bettinger (U. Md.) | " | 5.0 million; 0.75 mil |
| " | " | " | G. Frye (Case Inst.) | " | 1.5 million; 0.75 mil |
| " | " | " | I. Glass (MIT) | " | 10.6 million; 0.5 mil |
| " | " | " | C. Hemenway (Dudley Obs.) | " | 1.25 million; 1.0 mil |
| Aug | Palestine | NASA | G. Chapman (ORNL) | NCAR | 5 million; 0.75 mil |
| " | " | " | A. Womack (MIT) | " | 6 million; 0.5 mil |
| " | " | NSF | K. Anderson (U. Calif.) | " | 5 million; 0.75 mil |
| Sept | " | " | J. Lord (U. Wash.) | " | 600,000; 0.75 mil |
| " | " | NASA | J. Klarmann (Wash. U.) | " | 10.6 million; 0.5 mil |
| Sept | Palestine | NASA | T. Gehrels (U. Ariz.) | NCAR | 5 million; 0.75 mil |
| " | " | " | J. Sparkman (NCAR) | " | 111,000 and 2.94 million; 1.5 mil |
| " | " | " | R. Sullivan (MIT) | " | 10.6 million; 0.5 mil |
| " | " | " | A. Morris (NCAR) | " | 180,000; 0.75 mil |
| " | " | NRL, ONR | B. Stiller (NRL) | " | 10.6 million; 0.7 mil |

| Float altitude (ft) | Flight duration (hr) | Payload (lb) | Experiment | Remarks |
|---------------------|----------------------|--------------|--|-----------------------|
| 133,000 | 6 | 600 | Gamma ray astronomy | 2 flights |
| 100,000 | 2 | 100 | X-ray background | " |
| 120,000 | 8 | 500 | Gamma ray spark chamber | 3 flights |
| 100,000 | 7 | 800 | Air sampling | --- |
| --- | 6.5 | 890 | Down camera (R & D) | Double balloon system |
| 130,000 | 4 | 550 | Vista-Dome test (R & D) | Double balloon system |
| 130,000 | 4 | 320 | Sea-Space test (R & D) | --- |
| 110,000 | 10 | 125 | Far infrared | 4 flights |
| 110,000 | 12 | 1200 | Ultra-high energy particles | --- |
| 134,000 | 7 | 440 | Solar X-rays | --- |
| 133,000 | 6 | 550 | Solar neutrons; high-energy gamma rays | --- |
| 135,000 | 10 | 600 | Gamma ray astronomy | --- |
| 80,000 | 14 | 500 | Micrometeorites | 2 flights |
| 138,000 | 10 | 250 | Gamma ray astronomy | " |
| 90,000 | --- | 10,000 | High-energy particles | Tandem balloon system |
| 135,000 | 7 | 400 | Gamma ray astronomy | 2 flights |
| 120,000 | 10 | 500 | Ozone distribution | --- |
| 110,000 | 10 | 350 | High-energy neutrons | --- |
| 130,000 | 10 | 500 | X-rays | --- |
| 112,000 | 14 | 40 | Micrometeorites | --- |
| 120,000 | 8 | 600 | X-rays | --- |
| 125,000 | 8 | 600 | " | --- |
| 125,000 | 10 | 200 | " | --- |
| 105,000 | 20 | 250 | Nuclear emulsions | --- |
| 135,000 | 12 | 400 | X-rays | --- |
| 120,000 | 12 | 500 | Mariner | --- |
| --- | --- | --- | Stonehenge launch test | Tandem balloon system |
| 133,000 | 8 | 400 | Proportional counter | --- |
| 80,000 | 72 | 140 | Tracking study | --- |
| 140,000 | 48 | 100 | Nuclear emulsions | 2 flights |